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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,280	03/08/2001	Michael R. Franceschini	RTN-098AUS	6871

43520 7590 06/18/2008
STRATEGIC PATENTS P.C..
C/O PORTFOLIOIP
P.O. BOX 52050
MINNEAPOLIS, MN 55402

EXAMINER

CORRIELUS, JEAN B

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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06/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/802,280	Applicant(s) FRANCESCHINI ET AL.	
	Examiner Jean B. Corrielus	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2008 and 07 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-30 and 35-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/1/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 16-30 and 35 in the reply filed on 5/7/08 is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the steps of identifying, creating adapting, as recited in claim 16, the step of adapting as recited in claim 21, the data source and the transmitter, the transmitter configured to receive "the transmit signal" from the modulator for transmission to the signal space, as recited in claim 35, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 16-30 and 35-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. With respect to claim 16, the claim recites:” **identifying a signal space for wireless communication, the signal space including a range of frequencies; creating a waveform for the signal space, the waveform organized into a plurality of sub-bands**, each one of the plurality of sub-bands defined by **one of a plurality of time- frequency tiles characterized by a bandwidth and an integration time; adapting at least one of the bandwidth and the integration time of one of the plurality of the time-frequency tiles to provide a channel having a tile size selected to maintain a predetermined phase coherency across the time-frequency tile; modulating a data signal onto the waveform** using

direct sequence spreading for each one of the plurality of sub-bands, thereby providing a transmit signal; and transmitting **the transmit signal into the signal space.**"

However, the specification, as filed does not provide support for such limitations (emphasis added on the bolded limitations) as claimed.

Similar comment applies to the following limitations, recited in : claim 17 "**creating a waveform includes adding a preamble that includes an indication of the bandwidth and the integration time of at least one of the plurality of time-frequency tiles.**

claim 18" **wherein the preamble includes an indication of one or more of an M-ary alphabet size and a data rate for the at least one of the plurality of time-frequency tiles**".

Claim 19 "wherein at least one of the m-ary alphabet size and the data rate vary over time".

Claim 20 "**wherein the m-ary alphabet size and the data rate vary from burst to burst in a packetized data system**"

Claim 21 "**adapting the bandwidth and the integration time of all of the time-frequency tiles to provide a plurality of channels each having a coherent time-bandwidth product**".

Claim 22." **wherein all of the time-frequency tiles have a common bandwidth and a common integration time**".

Claim 23 “ **adapting at least one of the bandwidth and the integration time includes changing at least one of the bandwidth and the integration time between a plurality of bursts of data transmission**”.

Claim 24 “ **an actual phase coherency of a channel is determined according to one or more of experiment, radio frequency monitoring, and an estimate for an environment**”.

Claim 30 “**wherein the transmit signal carries the data signal at a magnitude substantially within a noise floor for the signal space**”.

Claim 35” a transmitter adapted to **create a waveform for a signal space including a range of frequencies**, the waveform organized into a plurality of sub-bands, **each one of the plurality of sub-bands defined by one of a plurality of time-frequency tiles characterized by a bandwidth and an integration time**, the waveform including a preamble that includes the bandwidth and the integration time of the plurality of time-frequency tiles, the transmitter further adapted to adjust the bandwidth and the length of time of one of the time-frequency tiles to provide a channel having a tile size selected to maintain a predetermined phase coherency across the time-frequency tile; and a modulator adapted to modulate the data signal onto **the waveform using direct sequence spreading for each one of the plurality sub-bands**, thereby provide providing a transmit signal; wherein the transmitter is further adapted to **transmit the transmit signal into the signal space**.”

As per claim 36, see claim 17.

As per claim 37, see claim 21.

As per claim 38, see claim 22.

Note that any claim whose base claim is rejected is likewise rejected.

Response to Arguments

5. Applicant's arguments filed 4/1/08 and 5/7/08 have been fully considered but they are not persuasive. Applicant argues that the provisional application filed on 3/9/00 discloses in detail all features set forth in the amended claims. However, a review of the provisional application does not show support for the claimed subject matter as underlined in the above rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jean B Corrielus/
Primary Examiner
Art Unit 2611